

REMARKS

This Amendment and Response is submitted in response to the Office Action mailed 04 FEBRUARY 2003 and is timely filed on Monday, 05 May 2003. Withdrawal of the rejection and reconsideration with an eye toward allowance is respectfully requested.

Claim Status

Claims 1-13 were pending in the application prior to entry of the proposed amendment. Given the nature of an Amendment After Final Rejection the Applicant's options for presenting new claims or raising issues that may require further search or examination are necessarily limited. Without admitting the propriety of the Examiner's rejections, applicant has canceled claims 2-5, and 7-13. Applicant has also added new claims 14-17 that somewhat address the meaning of "non-renewable" that has already been raised as an issue with the examiner and has been deleted from the base claims. Applicant has also incorporated the limitation of Claim 2 into Claim 1, and Claim 7 into Claim 6. Applicant reserves the right to represent these cancelled claims or amended versions of these cancelled claims without prejudice in this or a related application.

The claim amendments are presented in a revised format per the USPTO's announcement 'Amendments in a Revised Format Now Permitted', signed 31 January 2002, and accordingly do not conform to the current reading of 37 C.F.R. §1.121, which Applicants understand has been waived. Accordingly, a complete listing of all claims that are, or were in the application, along with an appropriate status identifier, is provided above in the section entitled "Amendments to the Claims". Markings are provided on claims amended in the present amendment. Support for the above claim amendments can be found throughout the originally filed specification, claims and drawings.

Drawings

The examiner objected to the drawings under 37 CFR 1.83(a) suggesting that the drawings must show every feature of the invention specified in the claims. The examiner therefore required that the subject matter of claims 3, 4, 5, and 13 should be shown or cancelled from the claims. As applicant has cancelled claims 3-5, and 13, Applicant trusts that drawing objections relative to these claims will be withdrawn.

With respect to Claims 2-5, and 13, the Examiner further suggests that the drawings are not clear enough as to how such power devices will be able to be implemented "within the housing" of the power generation module as disclosed in claim 1. Again, as Claims 3-5 and 13, this objection has been mooted given the cancellation of these claims.

With respect to the subject matter of claim 2, it has been incorporated into Claim 1 and recites that "the DC power generator comprises a proton exchange module fuel cell". Applicant has addressed at least some of the Examiner's concerns respective of the drawings in Applicant's response dated 12 December 2002 and does not repeat them here except by reference. Applicant is attempting to be

responsive but it is unclear what additional drawing the Examiner requires given that Rule 1.83(a) would be satisfied with "a graphical drawing symbol or label representation (e.g. a label rectangular box.)".

Applicant notes that FIG. 1 is an illustration of an electronic device 1 such as desktop computer including a housing 3 in which components of the personal computer are maintained, and a power supply 10 which is provided power via a transmission means 14, which is a conventional AC power cord. (See numbered paragraph 0021 of the application as filed.

Applicant further notes that FIG. 2 illustrates the power supply 10 in more detail and identifies the power supply 10 as having dimensions a, b, and c where the dimensions a, b, and c may be specified as industry standards values for a typical personal computer. The a, b, c dimensions are shown in FIG. 2. FIG. 3 is an illustration of an embodiment of a retrofittable power supply 100 showing the same a, b, and c dimensions as in FIG. 2 and they are described as such (See numbered paragraph 0024 in the application as filed). It is also stated that "Other characteristics of the retrofittable power supply 10 may be made to coincide with those of the power supply 10. Accordingly, the retrofittable power supply 100 may simply be inserted into the framework or bay normally used to house the power supply 10.

Finally, Applicant notes that FIG. 4 is a cross sectional illustration of the same retrofittable power supply 100 embodied as a fuel cell. Note further that the Abstract states that "The retrofittable power supply can simply plug into an existing case or frame of the non-portable electronic device, and can then serve as a means for powering both the non-portable electronic device, as well as a means for powering peripheral devices that may be coupled to the non-portable electronic device."

In light of this disclosure, Applicant submits that the disclosure as filed shows includes drawings showing features of the invention as required by 37 CFR 1.83(a) at least as to a fuel cell based retrofittable power supply as recited in amended independent claims 1 and 6, the drawings show in terms of dimensions and form how such fuel cell based power device will be able to be implemented "within the housing" of the power generation module as disclosed in claims 1 and 6. Out of an abundance of caution given the after final stage of prosecution and to avoid the threatened abandonment of the application should the required corrected drawings not be submitted, Applicant proposes the addition of a new FIG. 6 which combines the content of FIG. 1, FIG. 3, and FIG. 4. Applicant has also amended the specification to describe the new FIG. 6 in the DESCRIPTION OF DRAWINGS section and in the DETAILED DESCRIPTION section. No new matter has been added, the content of the drawing and the amendments to the specification being supported by the application as filed.

With these amendments, Applicant trusts that the objections to the drawings will be withdrawn.

Claim Rejections – 35 U.S.C. §112

Claims 2-5, 7-10, 12, and 13 were rejected under 35 U.S.C. 112, first paragraph. The examiner suggests that, as to some of the means for producing electricity, no structure is shown in the drawings nor any explanation given in the specification as to how such devices can be incorporated with a power generation module. Applicant notes that each of these claims have been cancelled thereby mooting the

specific rejections. Subject matter pertaining to the fuel cell embodiments similar to Claims 2 and 7 have been incorporated into Claims 1 and 6 respectively. Applicant has already described the manner in which the fuel cell shown in FIG. 4 and described in the specification relative thereto may be used in an electronic device, such as a personal computer.

The examiner had not rejected Claims 1 or 6 under 35 U.S.C. §112. With respect to any further rejection that the Examiner may choose to present, Applicant notes that the power generation module housing may be as simple as a rectangular box, frame, or cage; or may have a more complex shape or form having certain overall length, width, and height dimensions. Applicant respectfully submits that such physical shape or the disposition of the housing or the module within the housing should not present a §112 issue. Applicant further submits that fuel cells of the type described and claimed are known in the art and that such devices are known to have output voltage and current characteristics that may typically be a design choice. A further design choice is the nature of the electrical power output terminals and an almost unlimited choice of plugs, sockets, contact terminals, mating connectors, and the like are known in the art and available for selection and use in conjunction with the claimed invention.

Claim 1 has also been amended to recite that the electronic device is a personal computer. Personal computers have notoriously standardized power supply output voltages and connector standards. For example, the vast majority of personal computers require or have available from their power supplies a selection of DC voltages between -12 volts and +12 volts, usually including \pm 12 volts, and either or both of \pm 5 volts, and \pm 3 volts. The four-terminal plugs that extend from personal computers power supplies and onto circuit boards and peripheral devices are also notoriously well standardized. In analogous manner, AC powered devices connected to the personal computer may include CRT or LCD display monitors, scanners, printers, or other devices. These devices routinely operate at nominal 120/240 volts and 60/50 Hz depending upon either their country of manufacture or the country and their intended use.

Applicant submits that the description provided in the specification and drawings and the recitation in the claims would be more than sufficient for a worker having ordinary skill in the art either to select a fuel cell having appropriate output voltage, current, and power capacity along with suitable connectors to electrically connect the fuel cell to the personal computer; or to design either the fuel cell or the fuel cell and electrical interface circuitry to provide the required operation without any undue experimentation. While a generic electrical device is no longer claimed, applicant submits that it would be within the ordinary skill of a worker in the art, such as an electrical engineer, to select or design such fuel cell and either select or design such interface circuit to couple the fuel cell with the electrical device.

Applicant trusts that with this explanation, no 35 U.S.C. §112 rejection will be maintained for claim 1 or any of the other pending claims.

Claim Rejections – 35 U.S.C. §103

Applicant submits that Claims 1, now having been amended to include the limitations of Claim 2 (as well as other distinguishing amendments) now stands rejected at most under 35 U.S.C. §103(a) as being unpatentable over Carrier and Lee and further in view of Vaidyanathan. The Examiner seems to suggest that these references teach a so called “combined power supply” that includes all of the claim limitations; except that the Examiner concedes that the references do not disclose the type of battery that is used. The examiner further suggests that Vaidyananathan et al discloses “for the purpose of delivering high amount of energy and permitting the battery to be hermetically sealed, a rechargeable proton fuel cell”. The examiner then concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined power supply and to modify the invention by using proton fuel cell for the purpose of delivering high amount of energy and permitting the battery to be hermetically sealed as disclosed by Vaidyananathan

Applicant submits that Claims 1, 2, 6, and 7 were patentably distinct from Carrier and Lee in view of Vaidyananathan, but in light of the final nature of the rejection and the desire to advance claims pertinent to commercial embodiments toward allowance have amended the claims to further distinguish over the cited art.

Applicant notes that neither Vaidyananathan alone or in combination with the other cited references disclose, teach, suggest, or motivate any need for a “liquid catalytic proton exchange membrane module fuel cell” as claimed in claim 1. These references also fail to disclose, teach, suggest, or motivate any need for a water retention mechanism. Instead Vaidyananathan is directed to a “solid-state” Ni-MH battery that has a “proton-conducting solid organic electrolyte”. Vaidyananathan is particularly concerned with hermetically sealing the battery and obtaining advantages over “aqueous Ni-MH” batteries. Therefore, applicant submits that Vaidyananathan actually teaches away from the claimed “liquid catalytic proton exchange membrane module fuel cell and a water retention mechanism”.

Rebuttal to Response to Arguments

Applicant respectfully disagrees with the Examiner's suggestion that previous arguments were not persuasive but has nevertheless deleted the “non-renewable” limitation to advance the stage of prosecution to allowance. Applicant has instead added a new dependent claim (Claim 14) that “when the power supply ceases to be able to generate power due to depletion of a fuel for the fuel cell, the retrofittable power supply being either replaced with a second replacement retrofittable power supply having a fully charged fuel cell; or being removed from the personal computer, refilled with fuel and then replaced in the personal computer.” Applicant has also added a new Claim 15 which requires that “the fuel comprises methanol.” These limitations are supported by the application as filed.

CONCLUSION

Applicants submit the claims are in condition for allowance, and notification of such is respectfully requested.

Applicant has reduced the number of claims and has focused the amendments and remarks to issues that have already been raised during an earlier phase of examination and prosecution. In the event that the Examiner is not able to pass the remaining claims to allowance is requested to telephone the undersigned attorney at 650-494-8700 to discuss how such issues may be resolved before issuing an advisory action refusing to enter the amendment.

Respectfully submitted,
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